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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,682	11/29/2001	Mou-Chung Ngai	PGI6044P0740US	4570

7590 01/15/2004

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EXAMINER	
VANATTA, AMY B	
ART UNIT	**PAPER NUMBER**
3765	10

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/997,682	NGAI, MOU-CHUNG	
	Examiner	Art Unit	
	Amy B. Vanatta	3765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *2-5,9-14,22 and 23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-8 and 15-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I in Paper No. 9 is acknowledged. The traversal is on the ground(s) that the species are sufficiently closely related as to permit their consideration within this application. This is not found persuasive because the species are deemed to be patentably distinct, and if the generic claim is found to be allowable, the species will be allowed as well. Applicant's listing of claims readable on the elected species appears to be erroneous. Specifically, claim 2 is included in the listing, however claim 2 clearly does not read on Fig. 1, since it claims that the manifold is moved (oscillated). The manifold of Fig. 1 does not move in this manner.

2. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 6-8 and 15-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in reciting "said first" (line 12). It appears that this should read as "said first manifold".

Claim 1, line 13, recites "said machine direction" without proper antecedent basis.

Claim 1, line 14, recites "said individual jet orifices" without proper antecedent basis. The jets were not previously recited as "individual".

Claim 6 is indefinite in reciting "a first distance that is greater than said first distance" (line 14). It is unclear what is meant by such a limitation.

Claim 6 recites "nonwovne" in lines 3 and 7. The spelling of this term should be corrected.

Claims 7 and 8 recite "said second distance" without proper antecedent basis.

Claim 19 recites "between abut" in line 2. This recitation is confusing and appears to contain a typographical error.

Claim 21, part (i) recites "said individual jets" without proper antecedent basis. It appears that this should read as "said individual jet orifices".

Claim 21 recites "each of said jet grouping separated..." in part (i). This recitation is confusing and appears to contain a typographical error.

Claim 21 recites "nonwovne" in lines 2 and 7. The spelling of this term should be corrected. Also, "hydroentangled" is misspelled in line 4.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Putnam (US 6,568,049).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Putnam discloses a method including steps of providing a first nonwoven layer 24 on a moving support 40 and providing second nonwoven layer 22 overlying the first nonwoven layer (see Fig. 4). The layers are pattern hydroentangled with one another to form a laminate nonwoven fabric, including steps of providing a first manifold (14 in Figs. 1-2; 16 in Fig. 4) as claimed and conveying the moving support under the manifold such that streams of fluid from the jets are directed onto the layers to laminate them to one another.

7. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Fleissner (US 6,487,762).

Fleissner discloses a method including steps of providing a first nonwoven layer 8 on a moving support 6 and providing second nonwoven layer 5 overlying the first nonwoven layer. The layers are hydroentangled with one another to form a laminate nonwoven fabric having a colored pattern, thus forming a step of "pattern hydroentangling" as claimed. Also, Fleissner teaches that a patterning member may be used in order to result in patterned hydroentanglement of the layers (col. 2, line 6 – col. 3, line 5). Fleissner discloses steps of providing a first manifold 11 having a plurality of water jet orifices and conveying the moving support under the manifold such that streams of fluid from the jets are directed onto the layers to laminate them to one another.

8. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Ngai (US 6,314,627).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Ngai discloses a method including steps of providing a first nonwoven layer 30 on a moving support 46 and providing second nonwoven layer (40 or 14) overlying the first nonwoven layer. The layers are pattern hydroentangled with one another to form a laminate nonwoven fabric as claimed. Ngai shows a first manifold with a plurality of water jet orifices (emitting jets 44) and discloses conveying the moving support under the manifold such that streams of fluid from the jets are directed onto the layers to laminate them to one another.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleissner (US 6,487,762) in view of Contractor et al (US 4,069,563).

Fleissner discloses a method as claimed, however the manifold 11 is not disclosed as comprising jet clusters. Such a manifold structure is known, however, as shown by Contractor et al. Contractor et al disclose a method of hydroentangling including passing the web under a manifold which includes a plurality of jet clusters (e.g. , a cluster is formed by three orifices grouped as shown in Fig. 3, the cluster comprising one orifice from each of rows 30,32,34). Each jet cluster has a plurality of individual jet orifices 12 therein, as claimed (i.e. each cluster is formed of three diagonally spaced jet

orifices as shown in Fig. 3). Each of the individual jet orifices within each cluster are separated from one another by a first distance (i.e. the distance between row 30 and 32 and between row 32 and 34; Fig. 3). This distance is less than the distance between adjacent jet clusters. As shown in Fig. 3, the distance between adjacent jet clusters is at least twice the distance between individual jets of a cluster as recited in claim 7. Contractor teaches that such a manifold structure results in increased tensile strength of the resulting nonwoven product (col. 2, lines 24-65), and teaches that "the same amount of liquid will produce a stronger fabric, which can also lead to the other efficiencies hereinbefore disclosed" (col. 2, lines 31-33). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a manifold comprising jet clusters in the method of Fleissner, in order to produce a nonwoven having increased tensile strength, as taught by Contractor et al.

Regarding claim 8, the distance between adjacent jet clusters is not disclosed by Contractor as being at least 10 times the distance between individual jets of a cluster, however the spacing of the jets shown by Contractor may be varied as desired. Contractor teaches that the spacing will depend upon such operating conditions as size of the stream orifices, the type, length, and denier of the fiber and the area weight of the web, and the particular apertured support for the web (col. 4, lines 58-65). It would require only ordinary skill in the art to determine, based upon these considerations, the optimum jet cluster spacings and optimum individual jet spacings. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a manifold in the invention of Fleissner modified in view of Contractor et al comprising

jet clusters spaced such that the spacing between clusters is at least 10 times the first spacing, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

11. Claims 6-8 and 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ngai (US 6,314,627) in view of Contractor et al (US 4,069,563).

Ngai discloses a method including steps of providing a first nonwoven layer 30 on a moving support 46, providing a second nonwoven layer 40 overlying the first nonwoven layer, and providing a third nonwoven layer 14 overlying the first and second layers. The layers are pattern hydroentangled with one another to form a laminate nonwoven fabric as claimed. Ngai shows a first manifold with a plurality of water jet orifices (emitting jets 44) and discloses conveying the moving support under the manifold such that streams of fluid from the jets are directed onto the layers to laminate them to one another. Ngai does not, however, disclose that the manifold which emits jets 44 comprises "jet clusters" or "jet groupings". Such a manifold structure is known, however, as shown by Contractor et al. Contractor et al disclose a method of hydroentangling including passing the web under a manifold which includes a plurality of jet clusters or jet groupings (e.g. , a cluster or grouping is formed by three orifices grouped as shown in Fig. 3, the cluster comprising one orifice from each of rows 30,32,34). Each jet cluster has a plurality of individual jet orifices 12 therein, as claimed (i.e. each cluster is formed of three diagonally spaced jet orifices as shown in Fig. 3).

Each of the individual jet orifices within each cluster (or grouping) are separated from one another by a first distance (i.e. the distance between row 30 and 32 and between row 32 and 34; Fig. 3). This distance is less than the distance between adjacent jet clusters (groupings). As shown in Fig. 3, the distance between adjacent jet clusters (groupings) is at least twice the distance between individual jets of a cluster as claimed. Contractor teaches that such a manifold structure results in increased tensile strength of the resulting nonwoven product (col. 2, lines 24-65), and teaches that "the same amount of liquid will produce a stronger fabric, which can also lead to the other efficiencies hereinbefore disclosed" (col. 2, lines 31-33). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a manifold comprising such jet clusters for the jets 44 in the method of Ngai, in order to produce a nonwoven having increased tensile strength, as taught by Contractor et al.

Regarding claim 8, the distance between adjacent jet clusters is not disclosed by Contractor as being at least 10 times the distance between individual jets of a cluster, however the spacing of the jets shown by Contractor may be varied as desired. Contractor teaches that the spacing will depend upon such operating conditions as size of the stream orifices, the type, length, and denier of the fiber and the area weight of the web, and the particular apertured support for the web (col. 4, lines 58-65). It would require only ordinary skill in the art to determine, based upon these considerations, the optimum jet cluster spacings and optimum individual jet spacings. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a manifold in the invention of Ngai modified in view of Contractor et al comprising jet

clusters spaced such that the spacing between clusters is at least 10 times the first spacing, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 16, Ngai discloses that the first and third nonwoven layers have a basis weight of preferably 30 gm/m^2 which is within the claimed range (see col. 4, lines 55-56). Ngai teaches that the second nonwoven layer has a basis weight of 20–40 gm/m^2, preferably 30 gm/m^2, which is within the claimed range (col. 5, lines 32-33 and 42).

Regarding claims 17 and 18, Ngai does not disclose these specific ranges for the basis weights of the layers, however it is with the ordinary skill in the art to determine, through routine experimentation, the optimal basis weights based upon the processing conditions and types of fibers used. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use layers having basis weights with the claimed ranges in the method of Ngai, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Further regarding claim 18, and also with respect to claim 21, Ngai discloses the use of viscose rayon for the first and third nonwoven layers (col. 4, lines 51-52). Ngai teaches that the second layer (40) may comprise pulp (col. 5, lines 63-65). Regarding claim 19 and claim 21, parts (a) and (c), Ngai discloses that the first and third nonwoven layers are hydroentangled with an energy of about 1300 kJ/kg (col. 4, lines 56-60),

which falls with the claimed range. Regarding claim 20, Ngai discloses that the layers are hydroentangled together with an energy of about 1030 kJ/kg (col. 7, lines 24-25), which falls with the claimed range.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy B. Vanatta whose telephone number is (703) 308-2939. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Calvert can be reached on (703) 305-1025. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

Amy B. Vanatta
Primary Examiner
Art Unit 3765

abv
January 8, 2004